

# PATENT ABSTRACTS OF JAPAN

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(71)Applicant : SEIKO INSTRUMENTS INC

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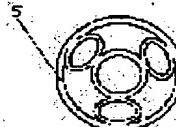
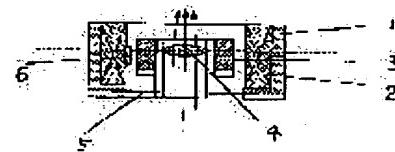
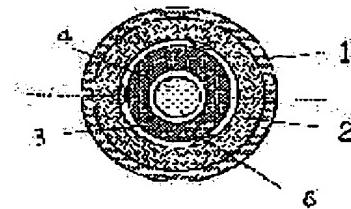
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## (54) ACTUATOR

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To reduce the consumption of electric power, to simplify assembly and to reduce costs by axially symmetrically arranging a coil in the outer periphery of a ring magnet and making mutual magnetic flux of the ring magnet and the coil interact over the whole periphery of the facing surface in the whole respective periphery of the coil and the ring magnet.

**SOLUTION:** A solenoid coil (coil) 2 is supported with a coil holder in the outermost periphery, a lens 4 is held in the inside with a radial orientated magnet (magnet) 3 which is radially magnetized in the inside, a supporting pair of the coil 2, the magnet 3 and a movable part of the lens 4 are connected with a ring leaf spring 5 wherein the magnet 3 and the lens 4 are formed so as to be movable in the x, y, z triaxial directions, and whereby an actuator is composed. Since all of flux density of both magnet 3 and coil 2 are not lost and interact by placing the magnetized magnet 3 in the inside of the coil 2, a current in the coil 2 is reduced. Further, since the driving direction is only the z axis and rotational force does not work, a rotation stoppage mechanism is not necessitated.



## LEGAL STATUS

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